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This study describes the processes involved in developing an observational system for analyzing teacher classroom behavior. Three-hundred-sixty sixth grade students reported their perceptions of their teachers by responding to a questionnaire and to the same questions during interviews. The students' perceptual reports were analyzed to determine usability, with 7,700 items found acceptable. Adjective descriptors were clustered into a twelve-category observational system. Perceptual statements were randomly selected and supplied to a panel of judges for sorting into the twelve categories, yielding a mean inter-judge percent agreement of 83. The system was taught to observers who used the system to code ten videotaped teaching episodes. Inter-rater reliability coefficients were calculated yielding an r = .61. (Author/CTM)

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THE USE OF PUPIL PERCEPTIONS OF TEACHER BEHAVIOR TO DEVELOP A CLASSROOM OBSERVATIONAL SYSTEM

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This study describes the processes involved in developing an observational system for analyzing teacher classroom behavior. Three-hundred-sixty students reported their perceptions of their teachers by responding to a questionnaire and during interviews. The students' perceptual reports were analyzed to determine usability, with 7700 items found acceptable. Adjective descriptors were clustered into a twelve category observational system. Perceptual statements were randomly selected and supplied to a panel of judges for sorting into the twelve categories, yielding a mean inter-judge agreement of 83.00. The system was taught to observers who used the system to code ten video taped teaching episodes. Inter-rater reliability coefficients were calculated yielding an r = .61.

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The study of classroom behavior has attracted a large following in the last two decades. Investigators have focused on using observational techniques as a means of gathering information about classroom behavior, but observation schedules have been developed to serve many purposes. Systems have been developed to cover everything from classroom social-emotional climate (Withall, 1949; Flanders, 1964) to the study of content used in specific lessons (Herbert, 1967; Hill, 1969). An entire anthology of observational systems has been developed by Simon and Boyer (1967).

The development of observation systems poses many problems. One of the major concerns is what to use as an information source. Traditionally three sources have been used in the development of observation instruments: 1) systems developed through theoretical premises (a deductive approach), 2) systems developed from classes of behavior which came from a theoretical position and from time spent in classrooms observing overt behaviors that actually occurred, 3) systems or procedures developed through participant observation and anecdotal record keeping (an inductive approach).

The early studies of classroom behavior relied more heavily on theoretical premises as a source of data for

developing an observational system. Anderson's (1939) category system reflects a theoretical position of the dominative and integrative behaviors of kindergarten children. Withall's (1949) seven category system for analyzing the social-emotional climate of a classroom evolved largely from his beliefs about dominative (teacher-centered) and integrative (learner-centered) behaviors of teachers. The basic underlying assumptions held by Withall were:

> "(1)...that the social-emotional climate is a group phenomenon,
>
> (2) that the teacher's behavior is the most important single factor on creating climate in the classroom,
>
> (3) that the teacher's verbal behavior is a representative sample of her (sic) total behavior. (p. 348)"

Flanders accepted some of the same theoretical principles as Withall when he developed the Flanders' System of Interaction Analysis. Instead of using the terms dominative and integrative to describe teacher behaviors, he created the dimensions of direct and indirect teacher behavior (Flanders, 1964).

Observational systems that were developed from both theoretical constructs and observed classes of behavior were developed later. A notable example is Hough and Duncan (1970) who constructed a system for instructional analysis from theory and observation. The Observational System for Instructional Analysis (OSIA) is a category system developed to test

instructional hypotheses generated from learning theory. The principles of learning employed in the construction of OSIA were drawn from reinforcement theory because, according to Hough (1970), reinforcement theory is by its very nature behavioristic. Classroom behaviors were observed to gather data regarding the nature of instructional processes and teaching strategies. Hough and Duncan then postulated that different strategies contained specific teacher and student behaviors. These behaviors represented a basis for their observation instrument.

One element seemed to be lacking in the early attempts at observation system development, viz., nonverbal behaviors. Although Anderson (1939), Withall (1949), and Flanders (1963) mentioned nonverbal behavior, they still relied entirely on verbal behaviors as categories for observation. It was not until Galloway's (1962) exploratory study of the possibilities for observing nonverbal behavior that these behaviors were taken seriously by educational researchers. Working both from theory and observational data, Galloway developed a seven category system for analyzing nonverbal behaviors in classrooms.

What appeared to need further investigation was the use of pupil perceptions as a source of data for developing observational schedules. Researchers who develop systems in one of the traditional means operate under the assumption that the theories and perceptions of the system developer

are the same as those held by students. Tuckman (1970) found a discrepancy in perceptions held by students and perceptions held by observers.

The role of social perception, one's perceptual awareness of those with whom he interacts in daily activities, has attracted the attention of scholars in recent years. More and more, man is becoming interested in man's relation to man. Steiner (1963) has suggested that the more knowledge an individual has concerning the intentions, preferences, and beliefs of the other person, the more effective he is at participating in group activities with the other person. Cantril (1968) points out that perceptual awareness aids self-definition. He indicates that man will be unsuccessful in carrying out his purposes to the extent that he is unaware of the purposes of those with whom he is associated.

Nowhere are Cantril's postulates more true than in the classroom. If, indeed, teachers are to have a significant influence on students, then one task of the teacher is to study the perceptions his students have of him. Jenkins (1960) has stated that it makes little difference what the teacher's intentions are, or how good the methods, if he fails to see the meanings his actions have for students. Galloway views perceptual awareness as an integral element in fostering a positive socio-emotional climate in the classroom. He says that the feeling tone in any classroom situation, the under-

lying attitudes and feelings of teachers toward pupils, and what pupils perceive about the teacher can promote or hinder the pupils' socio-emotional adjustment in school. Jennings (1948)has said that if a student does not feel that the teacher and other classmates accept and value him, his emotional reactions may lead to the restricting of his participation in the activities of the classroom.

What is needed in the field of observational systems is a system composed of categories which come directly from pupil perceptions of the teacher's classroom behavior. That was the major purpose of this study. By developing categories through the use of pupil perceptions as a source of data the issue of construct validity was dealt with straightforwardly. Very few, if any observational system designers have actually gone to the most likely source (the pupils) for information concerning teacher behavior.

Statement of the Problem

This study was an attempt to utilize student perceptions as a source of data for constructing an observational system which could be used for analyzing teacher classroom behavior. The following questions provided the focus of this study:

1. Can a valid and reliable procedure be developed to collect pupils' perceptions of their teacher's classroom behavior?

2. Can teacher behaviors identified by students be collapsed into categories that can be used in the analysis of teacher-classroom-behavior? Can categories be inferred from the teacher behaviors?

3. To what degree will a panel of judges agree on the assignment of pupils' perceptions to prescribed categories of teacher behavior?

4. Can an observational system which was developed from pupils' perceptions of their teachers' behavior be taught to observers to such an extent that they can observe and code ten minute episodes of video-tapes of a teacher's classroom behavior?

Sample and Procedures

The population involved in this study was 360 students in twelve sixth-grade, quasi-departmentalized classrooms. It was assumed that the quasi-departmentalized classrooms would provide sufficient extended student-teacher contact (minimum of two-and one-half hours perday): and that student contact with more than one teacher provided an excellent background of teacher behaviors against which the student could compare his teacher's behavior. The upper elementary grades were also chosen in order to obtain a desired level of sophistication in student responses to the questionnaire-interview-schedule items.

Student perceptions of their teachers were obtained by administering a 25 item questionnaire.[1] The constructs

[1]A copy of the questionnaire is included in Appendix A.

of the items came from research on characteristics of "good" teachers (Stern, 1963; Biddle, 1964; Combs, 1965; Hamacheck, 1972). The items followed the "focused interview" format. Focused interview questions function to focus attention upon a given experience and its effects.

The questionnaire was first administered to all the students in each of the twelve classrooms. The questions were read to the students to insure an understanding of each item. After all of the students had responded to the questionnaire in the above fashion, five students were randomly selected from each class, and asked the same questions during an audio-taped interview. Responses obtained during the interview were transcribed.

Once the questionnaire had been administered to the intact classes and to the individuals during an interview, a master list of all usable perceptual statements was constructed. Perceptual statments were recorded in the master list only once, thus eliminating duplications. The following criteria were applied to each statement to determine its usability in category construction.

1. Is the perceptual statement in terms that are too vague to be used to make inferences of teacher intent or behavior?
2. Is the reported behavior ambiguous?
3. Is the reported behavior a teacher behavior?
4. Could this teacher behavior logically occur in the context of a given question?
5. Could this perceived teacher behavior be observed by someone other than the student making the statement?

6. Could this perceived teacher behavior be observed by an outside observer in a single sitting not to exceed one hour in duration?

7. Can a behavior descriptor be associated with the perception being studied?

A total of 7,700 separate student perceptual statements were found usable following the above analysis.

A clustering of student perceptual statements included in the master list led to the identification of categories of teacher behavior. This clustering activity was accomplished by having a panel of six judges analyze samples from the 7,700 statements. By having each judge analyze a sample of the statements all 7,700 statements were studied. As the judges read each statement they were instructed to assign to each statement an adjective description. The adjectival descriptions they were to use came from three sources: (1) one word descriptors used to describe "good" teachers; (2) category names from existing observational systems; and, (3) dictionary terms where applicable.

Once all six judges had analyzed the statements and assigned descriptors a total of sixty-three categories had been identified. The six judges were then requested to work in a group to further cluster the sixty-three categories they had assigned to the statements. The process resulted in yielding, finally, 12 categories of teacher behavior. (A thirteenth category was eventually added to include moments of silence in the classroom.)

A random sample of one-hundred-fifty-nine of these statements was selected to be sent to another panel of judges who were requested to sort the statements into the twelve categories which had evolved from the cluster analysis procedure. This panel of judges consisted of eight university professors noted for this work in the study of classroom behavior of teachers and students, and for their work with observational systems. As a means of ascertaining the degree of agreement between the judges sortings of the pupil percetual statements, and the sorting conducted by this researcher, the following formula was employed:

$$\text{Percentage of Agreement} = \frac{\text{Number of identical statements which the researcher and judge place in a given category}}{\text{Number of statements which this researcher places in same category}}$$

As a final procedure the system was taught to a group of ten observers. At the conclusion of the training session, the observers observed and coded, using the system developed herein, five ten minute video-taped teaching episodes. These teaching episodes were of sixth-grade classrooms. The coded data were analyzed employing the Cohen (1960) coefficient of inter-rater agreement. The results of this data analysis procedure lended some insight as to the reliability of different observers using the system to code classroom interaction.

Findings

The findings of this study indicate, first that elementary school aged students do form relatively sophisticated perceptions of their teachers, and that a procedure can be developed to sample those perceptions. The students were able to report their perceptions of both affective and cognitive teacher behaviors. A sample of both the affective and cognitive teacher behaviors reported by students will be presented. In the paragraphs to follow two of the twenty-five will be discussed.

The questions, "How can you tell when your teacher is listening to you?" elicited the widest range of perceptual statements falling into the affective area. Indeed, this question evoked some of the most sophisticated responses from students. Some examples of student perceptual statements elicited by this questions were: "She comes to me," "She leans my way," "She says O.K.," "She waits until I stop talking then talks," or, "She doesn't talk while I talk" Almost all the children responded to this question by saying, "She looks me in the face," or "She looks me right in the eye." One of the most sophisticated perceptual reports in response to this question was when a child said, "She doesn't always agree with me when she is really listening." Certainly, when one disagrees with the substance of another person's statements, he must be listening attentively.

The above perceptual reports are descriptive of teacher affective behavior in that such behaviors contribute to the social-emotional climate in classrooms. Such teacher behaviors as attending or active listening tend to encourage open communication and to give students a feeling of worth.

Several examples of cognitive teacher behaviors came in response to the question, "Do you ever get the feeling that your teacher is really trying hard to teach? What does she do when she is trying to teach?" Most of the students responded by saying, "She explains things to us." Some students reported that the teacher kept "going over and over the stuff until we got it." Almost all of the children responded by saying that the teacher asked a "lot of questions," or, "answered our questions."

As can be seen in the responses to just these two questions, students reported both teacher verbal and nonverbal behaviors.

The nonverbal behaviors identified by students clustered into the following nonverbal dimensions: nearness or proximity ("the teacher comes near me when she listens"); use of voice---intonation and inflection ("sometimes when she wants us to listen she either speaks real softly or yells at us."); use of time ("She doesn't like to teach

math because she doesn't do much of it."); travel ("She spends most of her time at the desk, and only goes to those students she likes"); gesturing ("When she wants our attention she stands in front of the room, folds her arms, lets out a deep breath, and just stares, or she will tap her desk with a pencil."); and, facial expressions ("If she doesn't understand something we have told her she gets a puzzled look on her face, like when her forehead gets all wrinkled up.").

When all the students perceptual statements were assigned adjective descriptors, a total of sixty-three such descriptors were used. Those descriptors were clustered into like adjectives resulting in twelve categories of teacher behavior as perceived by students. The twelve categories with their respective definitions and examples of student perceptual reports clustering into the categories are as follows:

1. Explains or Clarifies: Giving facts or opinions about content or procedure; expressing his (the teacher's) own ideas; asking rhetorical questions. Rendering a previous statement more intelligable

either by (a) restating or rephrasing, or (b) adding informative details. Examples of student statements clustered into this category are: "She explains things to us;" "She lectures;" or, "She tells us how to do stuff."

2. Asks Questions: Asking questions about content or procedure with the intent that a student answer such questions. The questions may also ask for student opinion regarding content or procedure. Examples of student statements falling into this category are: "After she explains something she asks us a lot of questions about it;" or "She asks us questions about the subject."

3. Answers Questions: Includes direct answers to student questions. Such answers may give information or opinion but must be responses which answer or are directed toward answering student questions. Examples of student statements falling into this category are: "When we ask her a question she answers us;" or "She answers all of our questions."

4. Seeks Clarification: Behaviors used by the teacher to seek additional information which serves to clarify previous student talk. Some examples of student statements falling into this category are: "She has a puzzled look on her face;" "She says, 'Say that again.'"

5. Corrective Feedback: Includes behaviors that are designed to indicate the incorrectness or inappropriateness of student behavior. Examples of statements clustering in this category are: "She says, 'Wrong;'" "She says, 'That's not exactly right;'" or "She says, 'You're on the right track--but.'"

6. Models-Displays-Demonstrates: Behavior which point up student work as being considered as a standard of excellence to be imitated. Such teacher behaviors

as writing on the board, providing extra reference materials, doing experiments, or demonstrations, etc., are also included in this category. Examples of such teacher behaviors are: "She writes on the board;" "She brings pictures and stuff to class;" or "She demonstrates things in science."

7. Managerial Signals: Giving direction, commands, or orders to which the student is expected to comply. These behaviors may be either verbal or nonverbal. The behaviors may be intended to change student behavior from a non-acceptable to acceptable pattern. Examples of teacher behaviors identified and reported by students are: "She beats on her desk with a ruler;" "She stands in front of the room and lets out a deep breath;" or "She stares at us."

8. Active Listening-Assisting-Focusing Attention: A behavior that implies a willingness to listen with patience and interest to a pupil. By paying attention to the pupil, the teacher exhibits an interest in the pupil and implicitly manifests approval, satisfaction, or encouragement. An act that meets a pupil's request; a nurturant act. Examples of student statements of teacher behavior falling into this category are: "She nods her head when I am talking;" "She looks straight in my eyes when I say something;".

9. Positive Reinforcement-Rewards: A supportive behavior which exceeds a simple designation of correctness and rewards students for their performance. Includes behaviors with a positive value orientation directed at student behavior. Behaviors which praise or reward current behavior as well as previous or predicted future behavior are included in this category. Examples of student statements clustering into this category are: "She sends me on important errands;" "She tells me I am the best in the class;" or "She gives me good grades on my papers."

10. Breaks Tension-Humorizes: Behavior which tend to open up and/or eliminate the tension or anxiety of the situation. Jokes that release tension not at the expense of others. Laughing and joking that tend to ease tension. Examples of behaviors falling in this

category are: "She tells jokes and laughs a lot;" "She smiles a lot;" or, "She laughs at herself when she messes up."

11. Denies-Avoids-Ignores: A behavior that implies an unwillingness or inability to engage attentively in the communicative process, thus, indicating disinterest or impatience with the pupil. A behavior that openly ignores a pupil, or that is insensitive to a pupil's feelings; a tangential response. Some examples of student statements grouped into this category are: "She looks away when I talk to her;" "She never tells me my work is good;" or "She sends me away when I ask her something."

12. Attacks-Belittles-Ridicules: A harsh, punitive, blame-laying or guilt inducing behavior. A behavior implying strong disapproval of a pupil's behavior or pupil interaction. An expression that indicates strong negative overtones, disparagement, or strong dissatisfaction. An expression which functions in making someone or something the object of contemptuous laughter by joking, mocking, or caricaturing. Examples of student statements of teacher behaviors being clustered into this category are: "She gives me a 500 word essay;" "She makes me stay after school;" or "She yells at me."

Once these twelve categories had been identified and defined, all the usable student perceptual reports were analyzed and assigned to a category. All 7700 useable perceptual statements were thus categorized. Table 1 reports the tallies of student perceptual statements falling into each respective category, and the percentage of each category tally represented. These figures are for responses to the questionnaire (Q), the interview (I), and a combination of the two (Q and I).

An examination of the data in Table 1 indicates several interesting points. There appears to be little difference in the number of perceptual statements sorted into any one category across all 12 classrooms studied. For example, by examining the

TABLE 1

TALLIES OF STUDENT PERCEPTUAL STATEMENTS
INTO THE RESPECTIVE CATEGORIES

Classrooms		Categories																												Totals
		1		2		3		4		5		6		7		8		9		10		11		12						
		No.	%	No	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%					
A_1*	Q	30	6	10	2	9	2	24	4	13	2	54	10	13	2	74	14	99	18	38	7	61	11	113	20	538				
	1	15	10	7	5	6	4	6	4	3	2	7	5	12	8	17	12	20	14	10	7	11	8	29	20	143				
A_2	Q	26	5	5	1	1	1	20	4	14	3	25	5	32	7	76	15	82	17	38	8	93	19	79	16	491				
	1	8	5	1	1	3	2	11	6	5	3	8	5	18	10	21	12	38	21	13	7	23	13	28	16	177				
A_3	Q	21	6	3	1	2	1	21	6	8	2	15	4	25	7	40	11	74	20	33	9	33	9	88	24	363				
	1	3	2	1	1	2	1	12	7	5	4	5	5	13	8	21	13	38	24	16	10	17	11	24	15	161				
B_1	Q	30	7	8	2	6	1	23	5	27	6	12	3	41	9	49	11	91	21	33	8	41	9	74	17	435				
	1	6	4	3	2	3	2	6	4	11	7	4	3	16	3	33	21	26	16	10	6	14	9	27	17	159				
B_2	Q	25	6	5	1	7	2	21	5	26	6	14	3	27	6	67	15	73	17	26	6	39	9	102	24	433				
	1	11	8	3	2	2	1	4	3	7	5	2	1	17	13	10	7	25	19	11	8	13	10	29	22	134				
B_3	Q	12	2	21	4	8	1	37	6	22	4	28	5	55	9	107	18	85	15	58	10	37	6	114	20	585				
	1	6	4	8	6	6	4	4	3	5	4	7	5	10	7	24	18	17	13	12	9	15	11	22	16	137				
B_4	Q	34	6	5	1	9	1	16	3	20	3	17	3	20	3	81	13	115	19	33	5	73	12	195	32	618				
	1	4	2	4	2	3	2	7	4	10	6	4	2	13	8	36	22	17	10	8	5	22	13	37	22	165				
C_1	Q	30	6	17	4	10	2	17	4	25	5	22	3	16	4	75	16	99	21	32	7	41	9	86	18	471				
	1	5	3	4	3	5	3	4	3	7	5	8	5	11	7	16	11	74	16	16	11	15	10	33	22	149				
C_2	Q	16	3	5	1	8	1	17	3	7	1	11	2	21	4	91	17	82	17	63	12	54	10	162	30	547				
	1	9	7	4	3	6	5	6	5	2	2	4	3	10	8	14	11	25	19	14	11	11	8	28	21	133				
C_3	Q	29	7	5	1	6	1	21	9	19	5	9	2	34	5	54	13	73	18	38	9	37	9	87	21	412				
	1	9	7	4	3	3	2	4	3	3	2	7	5	10	7	20	15	24	18	11	9	10	7	29	22	134				
C_4	Q	26	5	11	2	5	1	16	3	26	5	12	2	30	6	67	13	107	21	46	9	41	8	112	22	499				
	1	8	7	2	2	2	2	5	4	4	4	6	5	5	4	18	16	21	19	13	12	7	6	22	15	113				
C_5	Q	29	5	6	1	8	1	21	4	16	3	13	2	52	10	90	17	116	21	44	9	36	7	109	20	540				
	1	3	2	3	2	3	2	7	6	8	6	2	2	16	13	22	17	12	17	15	12	8	6	18	14	127				
		Totals																												
	Q	308	5	102	2	79	1	254	4	233	4	232	4	366	6	871	15	1106	19	492	9	586	10	1321	22	5950				
	1	87	5	44	3	44	3	76	4	81	5	77	4	151	9	252	15	297	17	149	9	166	10	326	19	750				
Q*	1	395	5	146	2	123	2	330	4	314	4	309	4	517	7	1123	15	1403	18	641	8	752	10	1647	21	7700				

* The A Indicates the school from which the data was gathered, and the numeral indicates the classroom from which the data was gathered.

questionnaire percentages for Category 1 it can be noted that except for two instances the percentages reported are within a range of five to seven percent. The two and three percent were in classrooms B3 and C2 respectively. The ranges were very similar in each of the 12 categories.

Another finding which becomes evident through an examination of the data in Table 1 is the heavy loading of student perceptual reports into the more affective categories. By examining the percentages of categorized student statements displayed across each row (Classroom A1,A2,ecc.) for both the questionnaire (Q) and the Interview (I) this affective clustering becomes evident. Categories 8,9,10,11, and 12 are affective in nature and account for 72% of the student statements categorized. Categories 1 through 7 are more cognitive in nature. Those seven categories account for only 28% of all student statements categorized.

In order to provide a clearer understanding of the validity of the constructs (category names), samples of the students' statements were randomly selected for further analysis by a panel of judges. The judges were asked to sort each of the statements into one of the twelve categories provided them. Each judge's sorting was then compared to the sorting done by this investigator to get some indication of the agreement of the sortings. The judges' sortings and subsequent percents of agreement are presented in Table 2.

TABLE 2

JUDGES' SORTINGS OF PUPILS' STATEMENTS
OF THEIR TEACHERS' CLASSROOM BEHAVIORS
INTO PREDETERMINED CATEGORIES

Judge	Categories												Total	Per cent of Agreement
	1	2	3	4	5	6	7	8	9	10	11	12		
A	11	2	2	11	6	12	27	12	22	9	13	39	166	87.8
B	10	2	2	11	6	4	25	11	12	10	15	42	155	82.1
C	10	2	2	11	5	10	25	13	27	5	13	40	163	86.2
D	9	2	2	12	2	11	27	5	26	3	15	18	132	69.8
E	9	2	2	11	6	10	22	12	24	4	14	39	155	32.1
F	11	2	2	12	5	11	19	14	24	10	14	41	165	87.3
G	9	2	2	10	6	10	20	10	25	10	15	34	153	80.9
H	11	2	2	13	6	12	23	14	24	6	11	41	165	87.3
Whit-field	11	2	2	17	6	12	27	14	27	10	15	49	189	
													Dean Interjudge Agreement	82.92

The data in Table 2 support the idea that a relatively high percentage of agreement exists between the sortings of pupil perceptions done by this investigator and the sortings done by the judges. The grand mean of the percent of agreement is 82.9%. It can be noted that with but one exception (Judge D) the range is very narrow--80.9% to 87.8%. By comparing the number of tallies each judge had in each category to the number of tallies this researcher (Whitfield) assigned to each category, some additional information can be gleened from Table 2. The number of tallies falling into the first six categories (the substantive categories) is in relatively high agreement across all sorters. The differences begin to appear in the more affective categories (categories 7-12). Similar difficulties have also arisen in other systems (Broadwater, 1972).

Although the data in Table 2 report some relatively high percentages of agreement, caution must be taken in drawing conclusions based on sorting of statements into categories. There are some entry points for error. Some possible sources for error variance are: (1) mood of the judge at the time of sorting; (2) the judges' preconceived notions of teacher behavior associated with certain pupil statements of teacher behavior; (3) the judges may have had insufficient information concerning the context within which the student statement was made: (4) the judges may have cued on one word for sorting.

The final step in this study involved the training of observers to use the system in coding classroom interaction. This step was included to get a better understanding of the usability of the system. No attempts were made to develop a sophisticated training procedure. Nor, was the intention to obtain high measures of inter-rater agreement. Four judges coded six ten minute video-taped teaching episodes. Percentages of teacher behaviors assigned to each category across all episodes by each observer appear in Table 3. (The reader will note that there are five observers. Observer A in each episode is this investigator. In addition, a thirteenth category appears in Table 3. This category represents silence.)

An analysis of the data presented in Table 3 reveals some interesting information. It can be noted that when observers observe and code teaching behaviors there exist a distinct clustering of teacher behaviors into certain categories. The clustering of teacher behaviors into certain categories. The clustering of teacher behaviors coded by the observers tend to fall into seven categories: (1) Explains or Clarifies; (2) Asks Questions; (4)Seeks Clarification; (6) Models-Displays-Demonstrates; (7) Managerial Signal; (8) Active Listening-Assisting-Focusing Attention; and (9) Positive Reinforcement. Teacher behavior being classified into these categories are often referred to as cognitive behaviors or technical acts of teaching. As such there is a relatively common definition for such categories of teacher behavior.

TABLE 3

PERCENTAGES OF TEACHER BEHAVIOR CODED INTO PREDETERMINED CATEGORIES BY OBSERVERS OVER SIX VIDEO TAPED TEACHING EPISODES

Coding Episodes	Observation	Categories												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	A	18	11	00	13	00	14	10	26	5	1	00	2	00
	B	30	21	00	6	00	1	7	17	15	2	1	00	00
	C	29	27	1	5	00	5	10	6	10	1	1	00	2
	D	12	20	00	15	2	8	5	17	17	1	2	00	1
	E	17	13	00	15	00	9	8	28	5	1	3	1	00
2	A	52	11	00	2	00	1	8	14	11	1	00	00	00
	B	47	16	00	4	00	4	3	1	10	1	00	00	00
	C	53	14	1	4	1	1	5	5	11	2	1	00	00
	D	40	11	00	11	1	6	8	13	7	2	00	00	00
	E	48	9	00	3	00	3	9	2	5	1	1	00	00
3	A	33	00	00	1	1	00	19	40	2	2	00	00	1
	B	37	2	00	00	1	00	19	35	2	2	00	00	1
	C	35	2	00	1	2	00	17	36	1	2	00	00	3
	D	30	4	00	1	2	00	15	25	1	2	00	00	1
	E	31	00	00	00	1	00	22	42	1	2	00	00	1
4	A	19	24	00	2	1	00	9	22	27	00	2	2	2
	B	14	33	00	00	1	00	10	18	18	00	1	2	3
	C	27	22	00	4	2	8	7	11	00	2	1	4	
	D	13	28	00	4	1	00	7	20	17	1	1	1	5
	E	19	20	00	2	00	00	10	23	10	00	1	2	4
5	A	36	22	1	4	2	2	6	22	4	00	00	1	1
	B	31	35	2	1	00	00	4	21	5	1	00	00	1
	C	39	25	1	7	2	1	4	13	6	1	00	00	1
	D	31	23	1	7	1	00	2	22	9	2	00	00	1
	E	39	22	2	00	00	00	4	28	3	00	00	00	3
6	A	35	8	6	00	00	1	6	30	6	00	1	1	3
	B	38	7	6	00	00	00	4	32	4	00	1	1	6
	C	47	6	3	00	00	3	5	27	2	00	00	2	5
	D	38	10	3	3	00	3	5	26	3	00	1	1	7
	E	39	5	7	00	00	4	5	31	00	00	00	2	5

However, when one recalls the teacher behavior identified by students and the results of those reports as presented in Table 1 some interesting discrepancies can be noted. The students reported more negative affect behaviors than did the adult observers. While adult observers categorized only a very small percentage of the negative affect teacher behaviors (0,1, or 2%), the students reports accounted for a much higher percent of the behaviors classified (10 and 21% respectively). The research adult observers codings were then compared to this researcher's by employing the Cohen coefficient of inter-rater reliability (Cohen, 1960). The inter-rater reliability coefficients for each adult observer can be found in Table 4.

By analyzing the data presented in Table 4 one can note two areas of difference. Observer A was consistently higher in agreement on each episode than any other observer. This observer had had prior contact with the system while the others had not. This might indicate that the more contact one has with the system the better a person can use it.

One can also note that the mean coefficient of episode number 1 is significantly lower than the coefficients for any of the other episodes. One of the most likely causes for this difference is that from one coding to the next, the observers become more familiar with the conventions of the category system. The difference between episode number 1 and 2 can be accounted for almost entirely on this basis. Following the coding of the first episode there was a lengthy discussion of certain teaching behaviors and conventions to be used in the remaining tapes.

TABLE 4

COHEN-INTER-RATER-RELIABILITY COEFFICIENTS OF EACH OBSERVER
WHEN COMPARED TO THIS RESEARCHER
OF EACH INCIDENT OBSERVED

Observer	Coded Epicodes						Mean Inter-Rater-Reliability Coefficient For Each Observer Over All Incidents
	1	2	3	4	5	6	
A	.7857	.6571	.8695	.7976	.6933	.6973	.7500
B	.2658	.6250	.7285	.5833	.5405	.7702	.5855
C	.1379	.5211	.7000	.5747	.5333	.6944	.5269
D	.4883	.5394	.5974	.6117	.5263	.6756	.5731
Mean Inter-Rater-Reliability Coefficients For All Observers Over Any One Incident	.4194	.5856	.7238	.6418	.5733	.7093	Grand Mean .6089

In addition, the teaching styles varied from episode to episode.

Conclusions, Implications, and Recommendations

Perhaps one of the most obvious conclusions derived from this study is that students do perceive very subtle teacher behaviors, and that students can report their perceptions with a richness of language all their own. The language used by children to report their perceptions of people in their environment is quite different from the language used by adults for the same purpose. It appeared that the vocabulary used by children was minimal and straight to the point. Whereas, adults often talk in more general terms with much circumlocation. Children tend to use very brief sentences or short phrases as descriptors while adults tend to be more elaborate in their descriptions.

A second major conclusion to be drawn from this study is that teacher-nonverbal behaviors are identified by students as having a significant effect on the classroom environment. Although verbalization is necessary for most communication, the fidelity of communication acts also include nonverbal messages. Through verbalization one can communicate thoughts, ideas, and other notions, but the

congruity of the message can be affected by hidden agenda which can surface through nonverbal expressions. Students reported the verbal statements of teachers, but also reported, and often-times more emphatically, the underlying emotions of teachers as revealed by their nonverbal behaviors.

Early work in observational systems operated on an assumption that the teacher's verbal communication was representative of all significant communication occurring in classrooms (Withall, 1949). The findings of this study suggests a need for a re-evaluation of such assumptions.

A third major conclusion resulting from this study is that a valid and reliable category observational system for analyzing teacher classroom behavior can be developed by using student perceptions of their teachers as a source of data for category construction. Although not all the students' perceptual statements were usable, a great many were. The statements clustered well into useable categories for an observational system. While some statements appeared to fall into more than one category, for the most part, the categories were mutually exclusive. Some support for the distinctive nature of the categories were supplied by the judges who sorted a sample of the student statements into predetermined categories with relatively high agreement.

A final major conclusion resulting from this study is that the system developed herein can be taught to observers to the extent that they code episodes using this system.

An interesting area for speculation lies in the kinds of teacher behaviors reported by the students, and the types of behaviors noticed by adult observers. Students tend to identify behaviors which fall into the affective dimension. When one compares the types of behaviors identified by adults to those reported by students a distinct difference appears. The data in Table 1 indicated that students identify the more affective dimensions while the data in Table 3 indicate that adult observers more readily identify cognitive teacher behaviors. Similar results appeared in previous studies of this type. (Flanders, 1964).

There are many possible explanations for the difference in student statements being sorted into categories and observers' codings into different categories. Students could be weighing the affective teacher behaviors much more than do adults. Teacher behavior that appears to be trivial in the eyes of adult observers might be viewed as extremely significant in the mind of a child. Adults could be looking more at the cognitive teacher behavior because such behaviors require less information and are low inference in nature. Students, having had continuous

contact with the teacher, have a broader information base for weighing teacher behaviors than does the observer who has limited contact with the teacher.

A final implication of the study is the extreme difficulty of establishing an observational procedure which reflects student perceptions of teachers. Even though the category system developed herein evolved from students' perceptions of their teachers, the categories are not fully representative of the richness of pupil perceptions. Perhaps a combination of a sign system and a category system would be more representative but even such a combination precludes some of the perceptual richness desired. Training adults in the conventions of category and/or sign systems based on student perceptions does not assure that adults can interpret teacher behavior from the same perceptual base that a student experiences.

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Name _____

APPENDIX A

1. What does your teacher do to make you pay attention?
2. Where in the classroom does your teacher spend most of her time?
3. What does your teacher do when you give a wrong answer?
4. What does your teacher do when you give a right answer?
5. How do you know when your teacher is listening to you?
6. How do you know when your teacher isn't listening to you?
7. Do you ever get the feeling that your teacher is really trying hard to teach? What does she do when she is teaching?
8. Does your teacher ever think anything is funny? What sorts of things does she think are funny? What does she do when seomthing is funny?
9. Does your teacher ever make you feel important? What does she do?
10. Does your teacher ever make you feel you are not important? What does she do?
11. Does your teacher trust you? How can you tell?
12. Are there students in your class that your teacher does not trust? How do you know?
13. What does your teacher do when a visitor comes in the room?
14. Does your teacher spend much time helping students? What does she do?
15. Does your teacher do anything that makes you really like school? What does she do?
16. Does your teacher do anything that makes you really dislike school? What does she do?
17. What does your teacher do when someone in the class acts up?
18. Do you think your teacher likes teaching? How can you tell?
19. How do you know when your teacher is happy with what you've done?
20. How do you know when your teacher is not happy with what you've done?
21. Are there students in the class that your teacher really likes? How do you know?
22. Are there students in the class that the teacher doesn't especially like? How can you tell?
23. If you ever had to explain something to the teacher, how would you know that she really understood you?
24. How do you know when your teacher doesn't understand you?
25. What does your teacher do when something she is trying to demonstrate or explain messes up?